

REMARKS

Reconsideration and allowance of this application are respectfully requested in view of the above the discussion below.

Applicants invention has been discussed in previously filed Responses including the Amendment filed on September 13, 2004 with the following comments being addressed to the newly stated grounds of rejection.

Claims 23, 24, 27, 29, 30, 33, 36 and 38 have been rejected under 35 U.S.C. §102 as anticipated by Ivanov et al. (U.S. Patent No.: 5,489,820) as detailed item 7 on pages 3 and 4 of the patent Office Action. Claims 25, 26, 28, 31, 32, 34, 35 and 37 have been rejected under 35 U.S.C. §103 as unpatentable over Ivanov '820 and further in view of Gruner (U.S. Patent No.: 4,661,682) as discussed at pages 5 and 6 of the patent Office Action.

Applicants respectfully traverse these rejections on the grounds that independent claim 23 and dependent claims 24-38 provide a thermal spray coating method which is not shown or disclosed or made obvious by the references or their combination.

Prior to discussing the newly cited prior art, Applicants wish to point out the particulars of the claimed invention as supported by the specification with respect to "plasma". Independent claim 23 recites the recording of images of either a plasma jet or a particle jet. Applicants submit that Figure 1a shows a plasma jet and a particle flux. Each of these is a picture of the same flying particle. The Figure 1a is generated as a result of a burner or a spray gun which ejects hot powder particles which then pass through Figure 1 and create a coating on a substrate on the other side of Figure 1 (not shown). At the beginning of the Figure 1a (left side) the ejected hot powder particles are very hot and glow. These are called a "plasma jet". They are observed through darkened "sun-glasses" with a low transmission value T1. Subsequently, they are cooled down as they reach the right half of Figure 1a and their glow is not as bright. They are then observed with sun-glasses which are more transmissive. The transmission value T2 is much higher. These colder particles

are called "particle jet". In both parts of Figure 1a (plasma jet and particle jet) there are real powder particles (diameter 50 microns, see U.S. Patent No.: 6,001,342, Abstract) which construct a layer coating occurring on the right side or out of view (not shown) of Figure 1. The coatings are sprayed with a mass flux of 1-20 kg/hour.

The reference to Ivanov (U.S. Patent No.: 5,489,820) has a "real" plasma, a mixture of excited (single) atoms, (single) molecules, (single) ions and electrons as indicated in column 2, line 23. The diameter of these particles is one Angstrom ( $10^{-4}$  microns) for the atoms. The diameter of electrons is much smaller. The reference to Ivanov has no transport of material to form a layer or a coating. Furthermore, if Ivanov were to transport ions or electrons, and if they would stick or adhere on a layer, he would not need one hour for transporting one kg but instead  $10^5$  hours for one kg. This amounts to more than 10 years.

As a result, Ivanov takes a picture of a real plasma (flame) whereas the present invention involves glowing flying real particles as claimed and as supported in the specification. This constitutes an extreme difference between Ivanov and the claimed invention defined by independent claim 23 and dependent claims 24-38.

Additionally, the "real" picture of the presently claimed invention (recording of images) provides the ability to inscribe ellipsoids or other geometrical forms into the picture. The reference to Ivanov takes no "real" picture. Instead, Ivanov provides light to a series of photodiodes 12 or a series of CCD's 16. This is neither a real picture nor an inscription of circles or an ellipsoid (symmetric geometrical surface region).

The secondary reference to Gruener (U.S. Patent No.: 4,661,682) concerns a plasma spray gun for coating surfaces, however, the circles and ellipsoids (symmetric geometrical surface region) shown in Figures 5 and 6 of Gruener are pictures of already existing layers and are not pictures of the flying particles as claimed in Applicants invention.

In addition to the above-discussed methods of independent claim 23, the various dependent claims 24-38 further limit independent claim 23 with respect to recording the symmetric geometrical surface region as data records based on typical characteristics for the respective shape and either recording, controlling or monitoring the characteristics of the thermal spray coating method to provide the quality of the coating layer as a function of the data recorded. Additionally, the computer processing or encoding occurs by a contour detection algorithm using gradient steps as defined by dependent claim 28.

In response to the objection to the specification contained at item 4, Applicants have made the required correction, however, in response to the indication of the objection to the drawings, Applicants submit that the patent drawing review dated November 18, 2004 is based on drawings filed on March 13, 2000 and that such drawing corrections were addressed by the Amendment filed on November 3, 2003 which contained replacement drawing Figures 1-3. A second copy of those drawings are attached hereto, along with a copy of the date-stamped filing receipt indicating their filing on November 3, 2003.

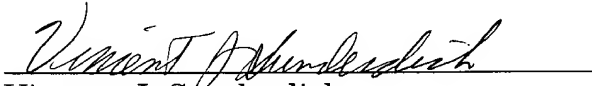
Therefore, in view of the distinguishing features of the method of the present invention wherein contrasted with the reference of record or any combination of the references of record, Applicants respectfully request that this application containing independent claim 23 and dependent claims 24-28 be allowed and be passed to issue.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #038733.48722).

Respectfully submitted,

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